SANTA CRUZ BIOTECHNOLOGY, INC.

Troponin I-C (G-11): sc-376662

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Actin is a highly conserved protein that is expressed in all eukaryotic cells. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. Myosin is a hexamer composed of two heavy chains (MHC) and four light chains (MLC); it interacts with actin to generate the force for diverse cellular movements, including cytokinesis, phagocytosis and muscle contraction. Troponin facilitates the interaction between actin and myosin by binding to calcium. Troponin comprises at least two subunits, which are divergent in cardiac muscle, fast skeletal muscle and slow skeletal muscle. Structures of skeletal muscle troponin are composed of Troponin C (the sensor), Troponin I (the regulator) and Troponin T (the link to the muscle thin filament). Troponin C is dumbbell-shaped and has a hydrophobic pocket that increases the contractile force of muscle fibers. Troponin C has two isoforms: fast and slow. Fast Troponin C has two calcium binding sites while slow/cardiac Troponin C has a single calcium binding site.

REFERENCES

1. Parmacek, M.S., et al. 1989. Structure and expression of the murine slow/cardiac Troponin C gene. J. Biol. Chem. 264: 13217-13225.
2. Koppe, R.I., et al. 1989. cDNA clone and expression analysis of rodent fast and slow skeletal muscle Troponin I mRNAs. J. Biol. Chem. 264: 14327-14333.
3. Ausoni, S., et al. 1994. Structure and regulation of the mouse cardiac Troponin I gene. J. Biol. Chem. 269: 339-346.
4. Potter, J.D., et al. 1995. A direct regulatory role for Troponin T and a dual role for Troponin C in the Ca^{2+} regulation of muscle contraction. J. Biol. Chem. 270: 2557-2562.
5. Barkalow, K., et al. 1995. Actin cytoskeleton. Setting the pace of cell movement. Curr. Biol. 5: 1000-1002.

CHROMOSOMAL LOCATION

Genetic locus: TNNI3 (human) mapping to 19q13.42.

SOURCE

Troponin I-C (G-11) is a mouse monoclonal antibody raised against amino acids 55-95 mapping near the N-terminus of Troponin I-C of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Troponin I-C (G-11) is available conjugated to agarose (sc-376662 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376662 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376662 PE), fluorescein (sc-376662 FITC), Alexa Fluor® 488 (sc-376662 AF488), Alexa Fluor® 546 (sc-376662 AF546), Alexa Fluor® 594 (sc-376662 AF594) or Alexa Fluor® 647 (sc-376662 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376662 AF680) or Alexa Fluor® 790 (sc-376662 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Troponin I-C (G-11) is recommended for detection of Troponin I-C of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Troponin I-C (G-11) is also recommended for detection of Troponin I-C in additional species, including canine and bovine.

Suitable for use as control antibody for Troponin I-C siRNA (h): sc-36738, Troponin I-C shRNA Plasmid (h): sc-36738-SH and Troponin I-C shRNA (h) Lentiviral Particles: sc-36738-V.

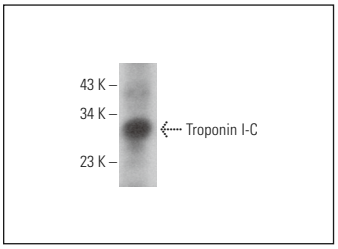
Molecular Weight of Troponin I-C: 30 kDa.

Positive Controls: human heart extract: sc-363763 or human fetal heart tissue extract.

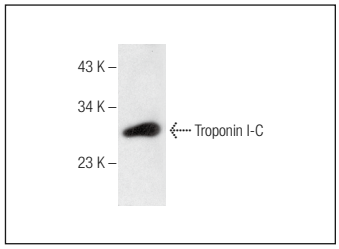
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Troponin I-C (G-11): sc-376662. Western blot analysis of Troponin I-C expression in human fetal heart tissue extract.



Troponin I-C (G-11): sc-376662. Western blot analysis of Troponin I-C expression in human heart tissue extract.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.